RINs Report

Forecast, Trends and Compliance Planning for 2012

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The Ethanol Blend Wall

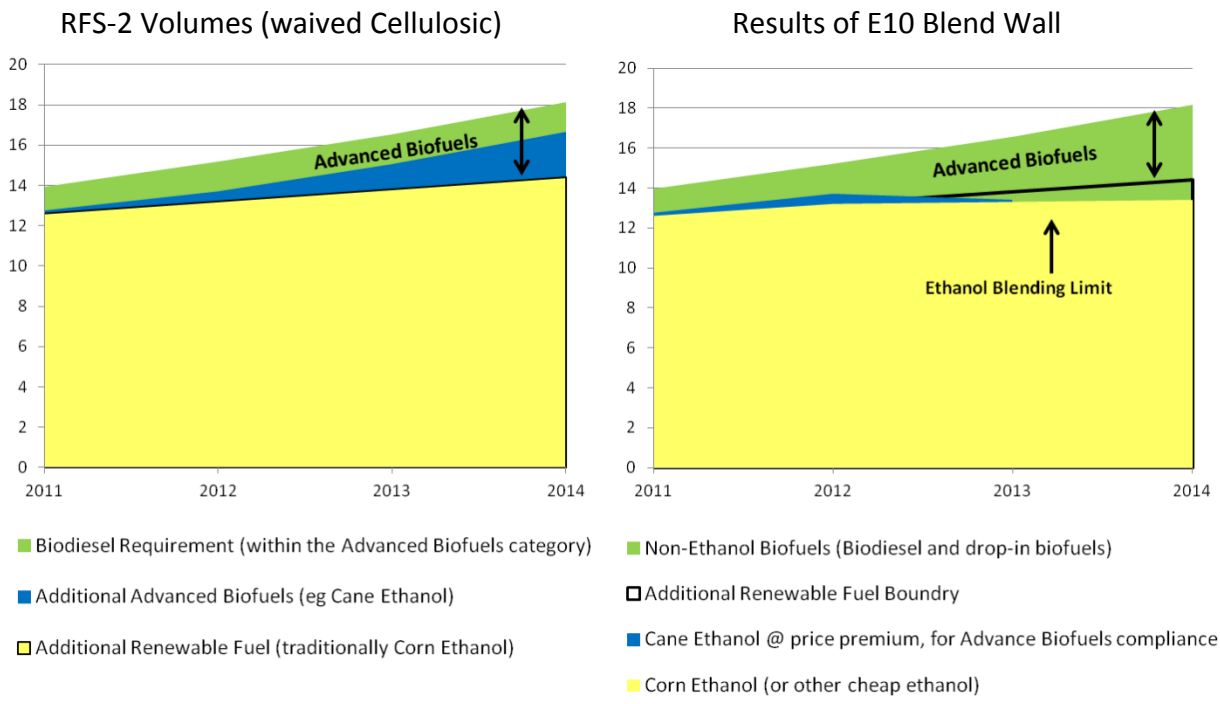
The US gasoline pool has almost reached its maximum absorption of ethanol volumes at a 10% blend rate. U.S. gasoline consumption is predicted to remain flat, while the implied ethanol demand from the RFS continues to grow. The EIA estimates that in June of 2011, voluntary blending into gasoline yielded an ethanol percentage from 10.04% to 9.56% with only small portions of PADD 4 showing percentages below 9%. In 2012, there are 13.2 billion gallons of renewable fuel required in addition to the specific advanced

biofuels mandate. This large volume would be most easily filled by corn ethanol. That represents 9.8% of the total U.S. estimated gasoline pool, and the increasing requirement worsens the situation after 2012. Though the EPA has made efforts in areas under its jurisdiction to allow ethanol blending at a rate of 15% (E15), retail usage at higher blend levels has not occurred because the E10 standard is interwoven into too many parts of local regulation, equipment safety standards, and engine warranties. Engine manufacturers have been steadfast that warranty issues are intractable, and there is no option to make them to re-certify their existing products for a new fuel. Gasoline retailers have multiple environmental regulations and UL listing issues to consider before changing to a fuel mix that exposes them to potential liability over misfueling by customers who, in the end, may not want a product that violates their warranty. The Reid vapor pressure (RVP, a measure of fuel volatility) issues for the new fuel blend would change a host of local and state compliance efforts. As a result, adoption of E15 is likely to proceed slowly.

The "blend wall" is often misinterpreted as an insurmountable hurdle for continuation of RFS2. It is important to note that the D6 RIN produced by corn ethanol is not the only biofuel RIN that can be used toward the RFS renewable fuel requirement outside of the advanced biofuels category [See Figure 2]. Contrary to perception, this additional renewable fuel volume is not a specific ethanol mandate. Instead, this portion of the RFS is a catch-all category and the only area where corn ethanol D6 RINs can be applied. Any type of RIN can be used to fill the remaining volumes after the advanced category is satisfied, but obligated parties wish to maximize ethanol use since it is the least expensive, largest volume biofuel on the market. A shortfall of D6 RINs from a limit on corn ethanol blending simply means other, more expensive RINs must be used. While aggravating compliance costs, the blend wall itself does not threaten or require modification of the RFS.

Theoretical modeling of the effects of a hard blend wall yield results that should be examined for long-term compliance strategy. With a shortage of D6 RINs from corn ethanol, other expensive RINs will be needed to meet the shortfall in total required gallons. The main source from non-ethanol RINs would be biodiesel (see Figure 8). As explained earlier, compliance managers can expect this shortfall to raise the value of D6 RINs, as the price gap between D6 and D4 RIN prices is substantial. What is counter-intuitive is the elimination of a price premium commanded for Brazilian cane ethanol, currently desired for the additional D5 advanced RIN. When calculating their total cost for compliance, obligated parties with a limit on ethanol use are not going to swap out a less-expensive gallon of corn ethanol for an expensive gallon of sugarcane ethanol. Biodiesel blending in excess of the advanced category is needed, putting D5 and D4 RINs in competition with D6 RINs to fill the remaining total renewable fuel requirement. Inefficiency in the marketplace may allow blending of sugarcane ethanol with a price premium at first, but when D6 RINs from corn ethanol rise to be priced against D5 RINs from sugarcane ethanol to fill the remaining gallons, blenders will choose the cheaper product with better blend margins.

Figure 8: The Effects of the E10 Blend Wall on RFS Compliance



Source: Hart Energy

In practice, the ethanol blend wall will most likely have a softer impact than the time-line indicates in this model, with some E15 penetration expected in the Mid-west and high D6 RIN prices potentially encouraging more E85 use. Biofuels from less-expensive feedstocks that do not qualify for Advanced RINs might become economical with rising D6 RIN prices (eg palm biodiesel). But continued slow increases in ethanol blending and rising RFS mandates eventually force these unusual changes in the RIN market to shape ethanol trades.

The full RINs Report is available here:
https://store.hartenergy.com/index.php?main_page=product_info&cPath=65_180&products_id=460

This analysis builds on research in the *2011-2020 Global Biofuels Outlook* and *Renewable Ethanol: Navigating the Rapids 2011-2015* produced by Hart Energy's Global Biofuels Center. The author welcomes further discussion and can be contacted below:

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